



PLANT
Ozon
MR and FFE

**MINE-RESCUE AND
FIRE-FIGHTING EQUIPMENT**

(ISO 9001:2015)

HISTORY OF THE COMPANY

JSC Plant "OZON" mine-rescue and fire-fighting equipment (JSC Plant "OZON" MR and FFE) was found in 2004 on the basis of an experimental factory of mine-rescue equipment "OZON" in Gai Orenburg region.

Since the establishment of the plant JSC "OZON" became a part of the group of companies "Glukauf", which in 1994 was the leader in wholesale of mine-rescue and fire-technical equipment in Russia and far abroad.

In 2004 JSC Plant "OZON" MR and FFE manufactured special devices for checking of panoramic masks and pressure oxygen cylinders, DG (disk sealing)(ДГ) and PC (control device)(ПК) and organized the production volume meter (ИО).

In 2005 JSC Plant "OZON" MR and FFE started manufacturing of self-contained regenerative respirator P-30M with the time of protective action - 4 hours, which were in great demand among rescuers. Later R-30M became available in lite version with metal-composite cylinder.

In 2005, we have produced self-rescuers SSS-1M - reliable personal protection for mining workers. The issue of self-rescuers SSS-1M have reached 3,500 units per month. It was the first type of self-rescuers, which were staffed with goggles.

In 2005, the Company received approval and certificate of compliance for the release of various types of fire- extinguishers.

In 2005 JSC Plant "OZON" MR and FFE issued the first bellows suction AC-1.

In 2005 JSC Plant "OZON" MR and FFE became a founding member and has been a full member of the All-Russia Association "Rescuers."

In 2006 JSC Plant "OZON" MR and FFE has entered the international market and began selling its products in South America and the Middle East.

In 2010, on the basis of early produced by JSC "OZON" respirator P-30M, the plant specialists have developed a line of new models of upgraded respirators P-30P, P-30K and P-34P, P-30K and masks.

In 2011, instead of the self-rescuer SSS-1M discharged early, JSC Plant "OZON" MR and FFE has developed a new generation of self-rescuers, with a superior technical characteristics, reduced weight and dimensions. Through the application of new construction materials, new manufacturing technologies and improved regenerative properties of the substance, downsized self-rescuer, and the time the protective effect has increased.

In 2011, JSC Plant "OZON" MR and FFE started production in the Moscow region of the mine-rescue, fire and medical equipment. The company team is represented by experienced staff who have experience in the design and manufacture of modern mine rescue, fire-technical and medical equipment. The Company employs specialists with experience in the coal mines in the Ministry of Emergency Situations, Ministry of Defense, in medicine. Many of them have academic degrees of doctors and candidates of sciences.

In 2011, the plant specialists have developed a high-frequency induction machine of mine connection "Quartz-3M" and the command center communication device "Quartz-KP-M."

We have developed and put into production underground unit of wire communications "Ugolyok- 2M". Mine Rescue Reel KSG-R was developed and tested, especially for underground wire communication apparatus "Ugolyok- 2M". KSG-R has a lower weight and improved sound conduction, than similar coil connectors.

In 2012, JSC Plant "OZON" MR and FFE released an experimental batch of new respirators and self-rescuers.

In early 2013 the plant "OZON" MR and FFE has begun to develop a new generation of respirators P-50P and P-54P and self-rescuers SSS-30, SSS-45, SSS-60 and SSS-120 minutes with improved characteristics.

The developed devices meet current physiological requirements, designed to protect the respiratory system of people from the harmful effects of unbreathable gas atmosphere during the rescue work in ore and coal mines and quarries, as well as to equip the rescue and fire units, using innovative technologies. The airway system of respirators has a new design solution. Protective action time is increased to 5 hours.

In 2013, for respirators P-30K, P-34K and P-50P, P-54P was developed an electronic control and signaling device «SPERO-1», designed to monitor the parameters of breathing apparatus and the environment, as well as alert the user and others of critical situations approach. For carrying and storing of cooling element a special container thermos was developed.

In 2013 to verify the integrity of all types of self-rescuers the device UPGS-R was created.

In November 2013 respirator P-30K was upgraded to a respirator P-30KM with a new plastic cartridge with a plastic cooler performance and connection box, which could be used in two ways for tipping the box and panoramic mask PM "OZON-K." Junction box was made of plastic.

In 2014, production of aspirators bellows AC-1 was resumed.



SELF-RESCUERS

SELF-CONTAINED MINE SELF-RESCUER

(SSS-30P, 45P, 1PR, 1R)

Self-contained mine self-rescuers are designed for protection of respiratory and vision organs of people from the harmful effects of unbreathable atmosphere during the evacuation of personnel in accident or waiting for help.

Self-rescuers are applied on hazardous production facilities, such as: coal mines, cuts, at construction and operational service of underground communications, tunnels, the subway, military facilities.

Self-rescuers are designed for permanent carrying or storage in equipped facilities and using in emergency situations.

Self-rescuers are made of ultra-strong carbon fiber, antistatic and electrostatic intrinsic safety. They are resistant to short-term open flame, mechanical and climate factors and can be used in an explosive atmosphere.

When switched on, the self-rescuer's quick trigger device provides instantaneous flow of oxygen to the user, whereby, for up to 50 seconds, oxygen in the amount of up to 5 liters allocates from the starting briquette. The released oxygen fills the breathing bag, and provides person's breathing in the initial period.

The device can be worn on the shoulder or on a belt.

The self-rescuers are issued ready to immediate application, at emergencies in mines, dangerous on sudden emissions of coal and gas.







Self-rescuers of the «OZON» plant MR and FFE include devices with protective time of 30, 45, 60, 75 minutes.

Escape devices are manufactured in plastic or metal housings.

All units have a transparent window, which allows carry out a visual inspection of impermeability.

The range of self-rescuers is certified according to the TP TC 019/2011.

SELF-RESCUER	SSS-30P	SSS-45P	SSS-1PR	SSS-1R
				
Rated time of protective action, min.				
-at the outlet of the emergency area at a speed 4 km/h	30	45	60	75
-at rest	120	170	300	330
Overall dimensions, mm				
-height	205	190	240	240
-length	203	171	203	203
-width	109	94	109	109
Weight, kg	2,1	2,5	2,6	2,8
The amount of oxygen, released from the starting briquette, dm ³				
-at release from the factory	5	5	5	5
-at the end of life	3,5	3,5	3,5	3,5
The effort of the lid opening, kg, not more than	8	8	8	8
The working volume of the breathing bag, dm ³ , not less than	6	6	6	6
Disconnection force of the airway system elements, kg, not less	10	10	10	10
Warranty period of service, years	7,5	7,5	7,5	7,5
Warranty period of storage, years	7	7	7	7

Самоспасатель шахтный изолирующий малогабаритный ШСМ-30Р предназначен для защиты органов дыхания горнорабочих во время аварий.

Представляет собой изолирующий дыхательный аппарат разового применения с химически связанным кислородом и маятниковой схемой циркуляции воздуха. Рассчитан на постоянное ношение на поясном ремне горнорабочего сверху спецодежды.

ТЕХНИЧЕСКАЯ ХАРАКТЕРИСТИКА

Время защитного действия, мин.....	30
Габаритные размеры самоспасателя без поясного ремня, мм ...	172x152x78
Масса самоспасателя без поясного ремня, кг.....	1,5
Масса самоспасателя с поясным ремнем, кг.....	1,7
Объемная доля кислорода во вдыхаемом воздухе, не менее, %..	21
Объемная доля диоксида углерода во вдыхаемом воздухе, не более, %.....	2,5
Давление срабатывания избыточного клапана мешка, кПа...от 0,05 до 0,3	
Полезная вместимость дыхательного мешка не менее, дм ³	5
Продолжительность включения в самоспасатель не более, с.....	15



It is projected by scientific-research institute "Respirator" Donetsk.

Self-rescuer ШСМ-30Р is designed to protect respiratory organs of miners in case of accidents.

ШСМ-30Р is isolating respiratory single-shot apparatus which works on chemically fixed oxygen and uses switching breathing circuit.

The light weight of self-rescuer is designed for the regular wearing on the waist belt of the miners.

Apparatus is certified on system Ukr SEPRO.

SPECIFICATIONS

Time of protection action.....	30
Overall dimensions.....	172x152x78
Mass of self-rescuer without waist belt, kg.....	1,5
Mass of self-rescuer with waist belt, kg.....	1,7
Oxygen volume in inhaled air %, not less.....	21
Carbon dioxide volume in inhaled air, not more, %.....	2,5
Working pressure of bag excessive, kPa.....	0.05 to 0.3
Usable capacity of breathing bag dm ³ , not less.....	5
Duration of switching on into self rescuer, not more, sec.....	15

Small-size mine self-rescuer ShSM-30

Mine isolating small-size self-rescuer ShSM-30 is designed for disposable protection of breathing organs of miners during accidents. Intended for utilization in locations where there is high risk of gas and coal emissions.

Mine isolating small-size self-rescuer ShSM-30 is fastened on the belt with rings and it presents a structure of regenerative cartridge with mouthpiece, chinrest and nose clamp, breathing bag with excess valve and headband.

The case of the cartridge is provided with heat isolation in order to prevent burns, and cover is equipped with dust filter, salivary and heat receiver.



TECHNICAL CHARACTERISTICS OF MINE SELF-RESCUER OF SMALL SIZE ShSM-30

Action Time:

- At movement - 30 minutes
- At discharge - 130

Weight of self-rescuer without waist belt, not more than - 1.5 kg

Weight of self-rescuer with waist belt, not more than 1.7 kg

Dimensions of self-rescuer without waist belt, 172 x 152 x 78 mm

Volume fraction of oxygen in inhaled air, not less than 21%

Bag excess valve actuation pressure, from 0.05 to 0.3 kPa

Effective capacity of breathing bag is not less than, 5 dm³

Duration of insertion to self-rescuer, not more than 15 s

Mine isolating small-size self-rescuer "ShSM-30 KS" is designed for protection of respiratory organs and vision of miners during accidents, related to formation of a breathable atmosphere, when moving from the place of operation to a fresh vent jet or to the place of location of standby self-accumulators or when sucking while waiting for assistance, and for respiratory and visual protection during evacuation in the event of accidents and fires.

Self-rescuer "ShSM-30 KS" is manufactured according to TU 32.9-00159404-013:2013, meets the requirements of DSTU EN 13794:2005.

RESPIRATORS

SELF-CONTAINED REGENERATIVE RESPIRATOR (P-30P, P-34P, P-30K, P-34K)

Respirators, by their protective action time, can be used:



- during accident elimination, connected with the explosions, emissions of gases, fires and ignitions;
- by rescue units in various industries, including coal and ore mines and cuts, the chemical, metallurgical companies, the enterprises of the nuclear industry and other dangerous productions.

The respirator's airway system has the new constructive decision which doesn't have analogs. Time of protective action is increased till 5 hours. Respirators are executed in metal or plastic cases.

All devices are supplied with a sound signal.
The line of respirators is certified according to TP TC 019/2011.



Self-Contained Regenerative Respirator	P-30P	P-34P	P-30K	P-34K
Housing material (knapsack)	metal	metal	plastic	plastic
Respirator Class by the time of protective action	4 O	2 O	4 O	2 O
Normalized time of protective action for the average work, ambient temperature (25 ± 1)°C and atmospheric pressure 100 ± 4 kPa (750 ± 30 mmHg),h, not less	4	2	4	2
Respirator's mass with cylinder, without facial parts, oxygen, XII-И, cooling element and cooler cover, kg, not more	Metal cylinder 9,3	Metal cylinder 7,2	Metal-composite cylinder 7,7	Metal-composite cylinder 6,1
Respirator's mass with cylinder, in running condition, with cooling element and cooler cover, kg, not more	Metal cylinder 12.6	Metal cylinder 10.0	Metal-composite cylinder 11.0	Metal-composite cylinder 8.9
Oxygen charge in cylinder at pressure of 20 MPa (200 kgf / cm ²), L	400	200	400	200
Capacity of cylinder,L	2	1	2	1
Working pressure, MPa	20	20	20	20
Rate of oxygen feed to respirator's system, l/min -constant -by lung-governed valve -by emergency valve	1,3-1,5 Not less than 70 60-150	1,3-1,5 Not less than 70 60-150	1,4+0,1 10-70 60-150 manual	1,4+0,1 10-70 60-150 manual
Mass of chemical lime absorber (XII-И) in the regenerative cylinder, kg	2,0	1,6	2,0	1,6
Useful capacity of breathing bag, l, not less than	5,5	5,0	5,5	5,0
Inspiratory volume during mechanical ventilation, dm ³ , not more than		2		2
Relief valve opening pressure, Pa (mm H ₂ O)	200 ± 100 (20 ± 10)	200 ± 100 (20 ± 10)	200 ± 100 (20 ± 10)	200 ± 100 (20 ± 10)
Rarefaction, which triggers lung machine, Pa (mm H ₂ O)	200 ± 100 (20 ± 10)	200 ± 100 (20 ± 10)	200 ± 100 (20 ± 10)	200 ± 100 (20 ± 10)
Overall dimensions, cm, not more than	460x380x170	460x340x140	460x380x170	460x340x140
Facial part	protective glasses	protective glasses, PM 88 "OZON"	protective glasses, PM "OZON-K"	protective glasses, PM "OZON-R"
Signaling device on the minimum pressure in the cylinder 5 ± 1 MPa	1 signaling device	1 signaling device	2 signaling devices	2 signaling devices
Basic parameters, dimensions	Established norm TY-3146-004-74714525-2005			

Metal-plastic cylinders for gases

ТЕХНИЧЕСКИЕ ХАРАКТЕРИСТИКИ SPECIFICATIONS

Баллоны металлопластиковые для газов	Количество штуцеров	Вместимость, л	Давление, МПа	Геометрические размеры, мм		Масса, кг
				Диаметр	Длина	
Metalplastic cylinders for gases	Quantity of the sleeves	Capacity, Ltrs	Pressure, Mpa	Geometrical dimensions, mm		Mass, kg
				Diameter	Length	
БМП-0,7-29	1	0,7	29,4	72	260	0,900
БМП-1-29	1	1,0	29,4	90	241	1,020
БМП-2-29	1	2,0	29,4	109	333	2,050
БМП-4-29	1	4,0	29,4	109	593	3,900
БМП-7-29	1	7,0	29,4	145	589	6,300
БМП2-0,7-29	2	0,7	29,4	72	276	1,000
БМП2-1-29	2	1,0	29,4	90	258	1,120
БМП2-2-29	2	2,0	29,4	109	345	2,150
БМП2-4-29	2	4,0	29,4	109	604	4,000
БМП2-7-29	2	7,0	29,4	145	601	6,400
СК-30	1	0,2	24,7	75	98	0,300
БК-0,7-20	1	0,7	20,6	73	260	1,000
БК-1-20	1	1,0	20,6	90	241	1,250
БК-2-20	1	2,0	20,6	110	333	2,000
БК-4-20	1	4,0	20,6	110	593	4,000
БК-7-20	1	7,0	20,6	145	589	7,000
БК2-0,7-20	2	0,7	20,6	73	276	1,100
БК2-1-20	2	1,0	20,6	90	258	1,350
БК2-2-20	2	2,0	20,6	110	345	2,100
БК2-4-20	2	4,0	20,6	110	604	4,100
БК2-7-20	2	7,0	20,6	145	601	7,100
БК-4,5-20	1	4,5	20,6	118	595	4,300
БК-0-4,5-20	1	4,5	20,6	115	595	3,200

Баллоны металлопластиковые предназначены для хранения и транспортировки сжатых газов: кислорода, воздуха, аргона, гелия, метана и сжиженных газов: закиси азота, углекислоты, бутана, пропана.

Баллоны имеют цилиндрическую форму с одним или двумя штуцерами с резьбой М16х1,5, изготавливаются двухслойными: герметичная оболочка из нержавеющей стали, оплетенная армирующим материалом на полимерной основе.

Срок службы баллонов не менее 10 лет или 5000 циклов заправки газом.

БАЛЛОНЫ МЕТАЛЛОПЛАСТИКОВЫЕ ДЛЯ ГАЗОВ METALPLASTIC CYLINDERS FOR GASES



Metalplastic cylinders are designed for keeping and transporting of compressed gases: oxygen, air, argon, helium, methane and liquified gases: lower nitrogen oxide, carbonic acid, butane, propane. The cylinders have cylindrical shape with one or two entrance sleeves with thread M16x1.5.

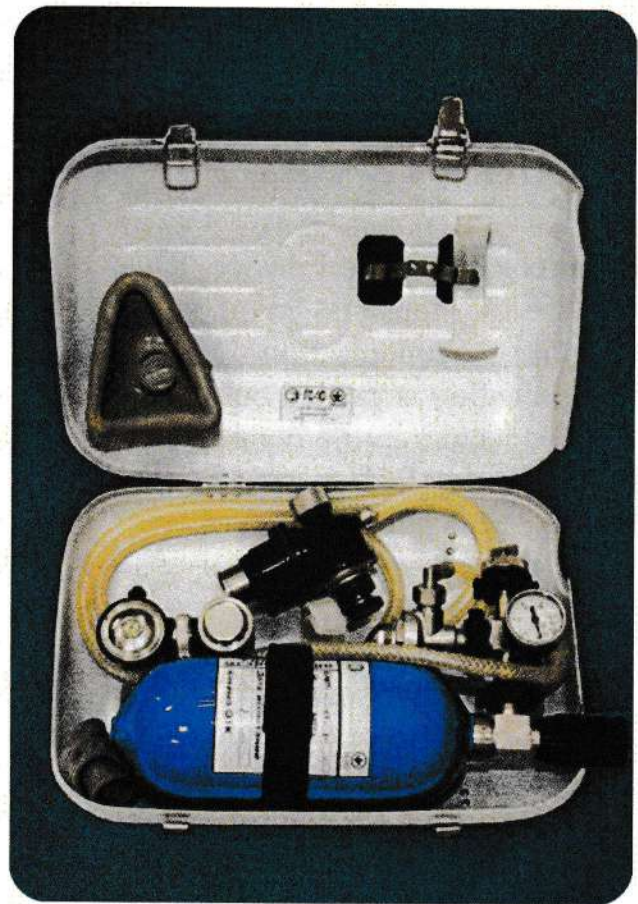
Cylinders produced are double-layer: hermetical cover from stainless steel, braiding the reinforced material on polymer basis.

The service life of cylinders is not less 10 years or 5000 cycles of gas refueling.

The device of artificial ventilation of lungs "GS-10"

The device of artificial ventilation of lungs "GS-10" is designed to hold an artificial ventilation of lungs to victims in case of accidents.

"GS-10" is used by medical personnel of mines, paramilitary mining service (VHS) and the Ministry of Emergency Situations.



Technical characteristics:

Oxygen reserve in the bottle at pressure of 20 MPa | 200

The operation time of the apparatus in IVL mode at lung extensibility is 0.005 l/cm water. St, min minimum 90

Inhalation pressure of the apparatus:

Minimum (main mode), pa (1800 150)

Maximum (additional mode), pa (3000 300)

Equipment inhalation pressure at emergency manual supply, Pa (5000 500)

Minute ventilation of the apparatus at lung extensibility of 0.005 l/cm water. St l/s (0.2 0.03)

Capacity of inhalation device, minimum, l/s 1

Overall dimensions, mm 353x242x120

Weight of the apparatus, kg 5.2

Average service life, years 10

COMMUNICATION DEVICES

HIGH-FREQUENCY INDUCTIVE MINE COMMUNICATION DEVICE "QUARTZ-3M"

The communication device "Quartz-3M" is intended to ensure the transmission of voice data in a two-way telephone communication and code alarm tones. Communication is carried out using as a guide insulated metal conductors in the mine rescue department (similar devices "Quartz", "Quartz-1") from the underground base and command center.



The device "Quartz-3M" is used for communication in technological purposes:

- for miners alert of accidents at work in mines rescue, emergency communications with mine personnel that is in mine workings;
- it can be used for communication in mines and for communication of the subscribers who are situated at the surface, in a trolley or other moving vehicle;
- it can be used for communication between the shielded rooms and units of nuclear power stations and hydroelectric power stations;
- as well as in military operations conducting in the mountainous and wooded-mountainous districts, in underground bunkers and command posts.

Telephone cables, automation cables and line wires of automatic gas protection (AF3), mine-rescue cable reel KSG-R with communication cable GSP 2*0,50 or specially laid lines of any insulated wire can be used as the metal conductors.

The working frequency, 266 kHz SSB modulation Peak transmitter power delivered to the antenna, W	0,7
Receiver Sensitivity (input), Mv	0,2
The output receiver capacity, at least, W	3,0
The output transmitter capacity, at least, W	0.9
Rated voltage supply, V	11.1
Power source type Accumulator	Li-ION 11 00 mAh
The communication range of insulated metal guide, at least	8km
Time of continuous work of the device without changing the power source (at ratio reception-transmission 10:1)	50h
Performance on the level and type of explosion protection	PO; IIa X
Operating temperature range	from -10 to +50 ° C
Overall dimensions, mm:	
-Device	75x120x182
-Antenna	54x142x250
Weight of the device, kg	1,1

CABLE LOUD-SPEAKING COMMUNICATION SYSTEM "UGOLYOK-2M"



Cable loud-speaking communication System "Ugolyok-2M" is designed to provide two-way loud-speaking simplex transmission of information between the department and the base with simultaneous audition of industrial noise during driving in mine workings.

Communication Cable GSP TU 16.K79-006-88 (TY 16.K79-006-88) and other wires with insulation (wire diameter 0.3 mm² or 0.5 mm²) can be used as lines.

Mine-Rescue Cable Reel KSG-R UHL5 ** (YXJI5 **) TU 8050-007-74714525-12 (TY 8050-007-74714525-12) is used.

Field of application:

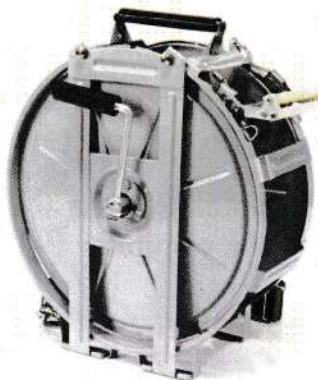
- coal mines excavations of all categories on dust and gas mode;
- developments and rooms which may contain combustible gases and vapors of flammable combustible liquids in air: oil, gasoline, kerosene, natural gas - methane, hydrogen sulfide, ammonia, hydrogen, carbon monoxide, ethanol, ethane, propane, butane, pentane.

The apparatus according to the level and type of protection is related to high explosion-proof electric equipment with intrinsically safe electric chains, its execution is "OExiaIICT3" and "RO Иа X" and cases protection degree - IR54.

Maximum transmission distance, at least, km	5
Continuous operation (without recharging the battery pack AB and AO), h	16,0
Output power of amplifiers, W, not less	0,1
Base device, kg	0,6
Department device, kg	0,6
Device charger, kg	0,8

MINE-RESCUE CABLE REEL KSG-R

Mine-Rescue Cable Reel KSG-R UHL5 ** (YXJI5 **) TU 8059-007-74714525-12 (TY 8050-007-74714525-12) is intended for installation and removal of wire line during organization of communication by means of the equipment of underground mine rescue wired connection such as "Ugolyok-2M" or "Quartz-3M".



The reel "KSG-R" provides for the application of wire marks GSP 2 × 0,35 or 0,5 TU 16.K79-006-88 GOST 6021-77 (TY 16.K79-006-88 ГОСТ 6021-77) with twisted or parallel conductors laid. Reel "KSG-R" according to GOST 15150-69 (ГОСТ 15150-69) has UHL (YXJI) category 5, for operating at temperatures from -10 to 55 ° C.

Reel "KSG-R" UHL5 ** (YXJI5 **) TU 8050-007-74714525-12 (TY 8059-007-74714525-12) has "ROSTEST" conclusion and the necessary certificates.

The length of the enclosing wire, km	0,8 ± 0,01
Wire unwinding force, H	from 2 to 5
Overall dimensions, mm	400x340x180
Reel's mass without wire kg, not more	4.5
Reel's mass with wire kg, not more	11
The specific consumption of materials, not more, kg / km	13.75
Average time between failures, h, not less	4000

CONTROL DEVICES

TIGHTNESS CONTROL OF PANORAMIC MASKS "PD-10M" (ПД-10М)



The device PD-10M is designed to test the tightness of the panoramic masks in conjunction with a respirator and without it.

Overall dimensions (length x width x height) – 250x180x285 mm.

The number of simultaneously scanned masks - 1pc.

Mass, not more than -13 kg.

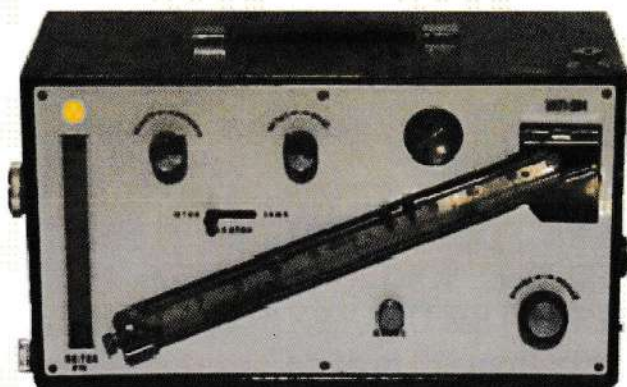
TIGHTNESS CONTROL OF HELMET-MASKS "PSHM-1" (ПШМ-1)

The device PSHM-1 is designed to test the tightness of helmet-masks.

The device consists of a disk with two rubber branches and a metal collar with the lock.

Overall dimensions -210x46 mm.

Weight, not more than 320 gr.



UNIVERSAL CONTROL DEVICE "UKP-5M" (УКП-5М)

Universal control device UKP-5M is designed to test the main operating parameters of the self-contained oxygen regenerative respirator P-30P, P-30K, P-34P and P-34K, Machine for Artificial Lung Ventilation GS-10, as in assembled form, and

in the course of their preparation for work.

Device UKP-5M allows you to take the following measurements:

- pulmonary machine valve opening;
- excess valve opening;
- the safety valve oxygen supply;
- normalized constant supply of oxygen by reducer;
- tightness of the airway system at excess and vacuum pressure;
- minimum and maximum inspiratory pressure, inspiratory and expiratory time, operating time in the mode of artificial ventilation of lungs.

Top limit of measurement of excessive positive and negative pressure, Pa: - mano-vakuummeter MB-2-000 - the manometer-rheometer	6000 1000
Price of division of a scale of a mano-vakuummeter, Pa	10
A limit blundered a mano-vakuummeter at a temperature $20\pm 5^{\circ}\text{C}$, Pa, no more than	± 40
Error of the manometer-rheometer, % no more than	4
The oxygen consumption measured rheometer, l/min	from 0,6 to 2,0
Main error of a rheometer, %, no more than	4
The oxygen consumption measured rheometer, l/min: - the top float (black) - the lower float (red)	1,5; 10 60, 70, 90, 100, 150
Error of a flowmeter, % of nominal rate, no more than	10
The maximum excessive and vakuummetric pressure, pressure created by the ejector, Pa, not less than	5880 (600)
The maximum stream created by the ejector during the forcing and suction at resistance of 2000 Pa, l/min, not less than	150
An oxygen reserve in a cylinder with a pressure of 20 MPa,l	200
Overall dimensions (without mano-vakuummeter), mm, no more: length x width x height	365x200x250
Weight without devices, kg, no more than	11

“IR-2C” (MP-2C) DEVICE

The unit “IR-2C” is designed to test the performance parameters of self-contained regenerative respirators, mine self-rescuers CCK and respiratory devices on compressed air in assembled form without assessment of indicators in terms of physical quantities.

IR-2C allows you to check:

- the state of the airway system tightness with excess and vacuum pressure;
- the normalized constant supply of oxygen by reducer;
- vacuum pressure of the lung machine triggering;
- excess valve operation.

Weight without spare parts, kg, not more than – 6,0.

Overall dimensions, mm, no more than 250x200x180.



BELLOWS ASPIRATOR "AC-1"

Bellows aspirator "AC-1" is made by TU 4215-005-74714525-2004 (TY 4215-005-74714525-2004).

Designed for investigated gas mixture pumping through specific types of indicator tubes at express determination of the content of harmful substances in the air (air of working zone, coal mine air and others.), in industrial emissions of enterprises, in the exhaust of cars.



Number of measurement channels	1
The amount of pumped air in one stroke, cm ³	100 + 5
The aspirator tightness defining air intake amount per 1 minute under the compressed bellows and the muffled opening for the indicator tube connecting, cm ³ , not more than	2,5
Basic reduced error, not more than, %	5
Overall dimensions, mm	
length	155 + 5
width	56 + 2
height	90 + 5
Weight with the ring, not more than, kg	0,38
Average time to failure, strokes, at least	2600
Average service life, years, not less than	3

"UPGS-R" (УПГС-Р) DEVICE



The device UPGS-R is made by TU 3146-011-74714525-12 (TY 3146-011-74714525-12).

Designed to test the tightness of the self-rescuers of SSS type and its modifications.

Climatic modification Y Category 4 in accordance with GOST 15150 (ГОСТ 15150) for operation at temperatures from 10 to 35 ° C, relative humidity from 30 to 80% and atmospheric pressure from 760 to 1040 Pa (from 570 to 780 mm Hg).

Operating pressure in the chamber, kPa (mbar)	5 ± 0,2 (50 ± 2)
Pressure measurement range, kPa (mbar)	0-16 (0-160)
Manometer accuracy class	2,5
Overall dimensions, not more than, mm	400x290x450
Weight, kg, not more than	18

CONTROL AND ALARM DEVICE UKS «SPERO-1»



Control and alarm device UKS «SPERO-1» is designed for:

- mine-rescue and fire respiratory devices;
- control of the current oxygen pressure in respiratory system of a respirator.

Device UKS «SPERO-1» indicates the oxygen pressure in the cylinder in digital form (MPa or bar), as well as in graphical form on the display screen, the remaining time in minutes in accordance with current oxygen pressure in the cylinder and the degree of its consumption.

At approaching of the critical level of

oxygen pressure in the cylinder (at a residual pressure of 7.0 MPa (70 bar)) UKS «SPERO-1» beeps at intervals of one minute.

Upon reaching the minimum of oxygen pressure level in the cylinder- 5.5 MPa (55 bar) notification sound becomes permanent.

The device UKS «SPERO-1» is equipped with motion sensor. In the absence of a lifeguard movement for 20 seconds, an alarm is triggered to supply a loud beep to alert others that the user may be unconsciousness.

UKS «SPERO-1» is equipped with an electronic compass.

Electronic thermometer of the device informs the rescuer about the temperature in the outbreak of fire or in place of rescue work.

Batteries provide 20 hours of continuous work.

The device is fully compatible with respirators P-30K, P-34K and P-50P models, P-54P produced by "OZON" plant MR and FFE.

Respirator P-50P and P-54P will be equipped with a control device UKS «SPERO-2» In assisting the victim with the use of a respirator P-54P will be applied UKS «SPERO-2C» allowing to monitor to display the victim's heart and respiratory rate.

Measurement range of the oxygen pressure excess, MPa (bar)	0 -25 (0-250)
The sound power level of the sound signal, dB, not less than	90
Operation period of the device depending on an operating mode (with fully charged rechargeable batteries), hours	20
The device is designed for operation at ° C	-40 to +60 ° C
The device is resistant to the temperature of	-60 ± 3 ° C - 4hours +200 ° C - 60 seconds
Exposure to an open flame with a temperature of	800 ± 50 ° C - 5 ± 0,2 seconds.
Efficiency after immersion in water	15 seconds
Weight of the device with batteries, not more than, kg	0,350
Total average service life, not less, years	5

ACCESSORY EQUIPMENT



BAG OF THE DEPARTMENT COMMANDER

It is completed by the order of Minister of Emergency Situations number 765 and 766.

PANORAMIC MASK PM "88 OZON" (88 O3OH)

Panoramic mask PM "88 OZON" is designed to replace an outdated helmet mask.

The mask is designed to protect the face, eyes and respiratory organs from the highly-toxic chemicals, biological affecting agents, radioactive dust, for the supply of purified air and discharge into the atmosphere of exhaled air.

Applications: designed for acquisition of civil and industrial gas masks.

Material: rubber, durable sight glass.

Weight: 450 gr.



PANORAMIC MASK PM "OZON-K" (O3OH-K)



Panoramic mask PM "OZON-K" is not an independent breathing and sight apparatus protective equipment. It is used only as the front part to connect the user's respiratory system with breathing apparatus.

The mask is intended for use with the device with compressed air and the self-contained respirators P-30P, P-30K, P-50P.

Big, not distorting visible objects polycarbonate or triplex safety glass, differs with advanced optimized field of view. Refractive form of glass provides exceptionally wide field of view and a large viewing angle. Anti-scratch coating and good air circulation protects the surface of the sight glass from fogging and scratches.

The presence of the adjustment straps on mask, provides a comfortable and tight fit to the head and face.

The mask body made of hypoallergenic silicone, ergonomic headband and double sealing line, ensure a secure and comfortable fit for any size person.

Due to the possibility of mask selection with various compounds and suspension systems, with a belt system or the adapter to the helmet, it is perfectly integrated in any combination of the helmet, the mask and the respiratory system (breathing apparatus with compressed air, the unit loop).

A unique communication system based on apparatus "Ugolyok-2M" and "Quartz-3M", is developed for the panoramic mask PM "OZON-K", which perfectly matches the design and ergonomics of the mask.

Suitable 5-point headband, facilitates putting on and removal of the mask, and allows to reduce the pressure on the head and to improve the operation comfort.

One universal size simplifies operation, storage and spare parts purchase for the mask.

Built-in speech diaphragm of stainless steel provides a good connection.

Aspiration coefficient under the mask, is not more than 0,03%.

The view area, not less than 85%.

Weight is not more than 450g.

Warranty period of storage life in a package of the manufacturer is not less than 6 years.

PANORAMIC MASK PM "OZON-R" (O3OH-P)



Panoramic mask PM "OZON-R" is designed to replace an outdated helmet mask.

PM "OZON-R" is not an independent breathing apparatus, but only the front part of the respiratory system to connect the user with breathing apparatus.

The mask is designed for use in breathing apparatus with compressed air or self-contained respirators P-34P, P-34K, P-54P.

The mask has a broad overview of the image without distortion or misted glass.

PM "OZON-R" is compatible with the breathing apparatus with compressed air, as well as regenerative self-contained respirators.

Perfectly integrates into any combination of the helmet, mask and respiratory system of different types of breathing apparatus.

The mask is equipped with intercom system, providing the transfer of normal, undistorted speech.



STRETCHER NPPS GS "OZON" (НППС ГС «ОЗОН»)

Stretcher length-cross folding mine rescue NPPS GS "Ozon" modes 1 and 2.

Stretcher on rigid support, bars are made of a light alloy. Stretcher collapse in the longitudinal and transverse direction twice. There are clamps of hinges, a set of belts of rigid fixation and transportation.

Stretcher mod. 2 have a special device for vertical lifting.

Can be removed in a compact case, backpack 270x220x1300 mm, fabric - water repellent polyamide high strength fabric. Cover-backpack with a stretcher is

light and compact, the material of stretchers fabric - water-repellent nylon high strength fabric, does not melt from fire. The stretcher can be used in rescuing victims from the rubble, inaccessible places (mines, narrow openings) in emergency situations.

Loading capacity, not more than -160 kg;

Overall dimensions (length x width x height):

- In working condition – 2200x540x170 mm;

- In the transport state – 1150x220x160 mm;

Weight, kg, not more than -8,5.

Certificate of Conformity ROCC RU.АИ32.Н10106

№1464684

THE METAL-COMPOSITE CYLINDER - 1L AND 2L

The metal-plastic cylinder with the VKMU-95 valve represents the vessel consisting of an internal cover and an external layer.

The inner shell (liner) made of steel and the outer layer is made of high-strength reinforcing material in the epoxy binder. Metal-plastic bottle has a neck with an internal thread for connecting valve.

The cylinder is designed for storage of gases under pressure.



The metal-composite cylinder	1L	2L
Working pressure, MPa (kgf / cm ²)	2,6 (210)	20,6 (210)
Test pressure, MPa (kgf / cm ²)	30,9 (315)	30,9 (315)
Capacity, L	1	2
Weight, kg	1,485	1,800
The outer diameter, mm	94	101
Length, mm	240	260
Type the neck threads	M16x1,5	M16x1,5
The allowable number of refills	5000	5000
Service life, years	10	10



STEEL CYLINDER FOR OXYGEN 1L AND 2L

Seamless steel cylinder with valve VKMU- 95 for gaseous oxygen with a working pressure of 20 MPa for oxygen gas storage. It is used in the insulating regenerative respirator P-34P (volume 1L) and P-30P (volume 2L).

Seamless steel cylinder with valve ECM-95 is used with the device "Gornospasatel - 10" ("Горноспасатель-10").

Steel cylinder	1L	2L
Working pressure P (MPa)	20	20
Test hydraulic pressure, MPa	30	30
Capacity, L	1	2
Oxygen supply in the tank, L	200	400
Dimensions, mm	108x425	108x425
Weight, kg	2,685	3,285
Operating temperature range	from -20 ° C to + 40 ° C	from -20 ° C to + 40 ° C



Russian Federation
142600, Moscow Region.,
Orekhovo-Zuyevo.,
Torfobriketnaya str, 2